patients' treatment adherence and persistence. **METHODS:** A systematic review of the literature was performed in MedLine/PubMed, Cochrane Library, ISI WOK, MEDES, IBECS, CSIC, Google Scholar (2002-2012) to identify articles referred to direct COPD cost and treatment persistence and adherence. Based on the direct cost data extracted, the annual cost difference between an adherent and non-adherent and a persistent and non-persistent patient in Spain was estimated. Costs were updated to €, 2012. **RESULTS:** A total of 48 articles were included (9 Spanish; 39 international). The mean annual direct cost of a COPD patient in Spain varies between €301 and €4.226, depending on the publication. Patients' adherence and persistence on COPD treatment and their annual costs was analyzed in 3 articles (no Spanish publications identified). Multiple inhaled treatments and devices of complex use contribute to poor adherence and persistence and to higher medical resources use and more exacerbations. Treatment adherence and persistence implies a 9% and 3% decrease in mean annual direct cost of a COPD patient, respectively, while non-adherence and non-persistence means an increase of 5% and 13%. The difference between the mean annual direct cost associated to adherent and to non-adherent patient varies from €43 to €601 (depending on the selected publication) and rises up to €89 to €1.674 in severe COPD patients. A difference between annual direct cost in persistent and non-persistent patient was estimated in €47 to €666 that reached €99 to €1.855 in severe COPD patients. **CONCLUSIONS:** Treatment adherence and persistence information is scarce. Therapeutic strategies improving patient adherence and persistence may optimize outcomes contribute to COPD costs contain.

PRS17

THE BURDEN OF PNEUMONIA IN MALAYSIA, INDONESIA AND PHILIPPINES

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OBJECTIVES: The Casemix databases contain clinical costing information from hospitals in Malaysia, Indonesia and the Philippines. The objective of this study was to determine burden of pneumonia in these three countries. **METHODS:** Pneumonia cases occurring in a single year were identified using ICD10 codes, J10-J18. Patients were further categorized into community-acquired pneumonia (CAP) or hospital-acquired pneumonia (HAP); CAP if they had 1) a primary diagnosis of pneumonia, or 2) secondary diagnosis of pneumonia with primary diagnosis of a respiratory condition; HAP cases had pneumonia in any of the secondary diagnosis fields with non-respiratory primary diagnoses. Descriptive analysis was performed to ascertain patient age groups, mean age, mean length of stay (LOS) and case fatality rates (CFR). **RESULTS:** A total of 15,851 pneumonia cases in year 2010 for Indonesia and Philippines and 2011, for Malaysia were included in the analysis. The mean age of patients was 47.5 years in Malaysia, 36.6 years in Indonesia and 23.5 years in Philippines. There was a preponderance of CAP cases among the very young and the very old while HAP cases were more likely to occur in older persons. The overall CFR of all pneumonia hospitalizations was 11.5% for Malaysia, 5.2% for Indonesia and 3.6% for Philippines. The cost of hospitalization was USD 1,177.50, USD 1,103.80 and USD 254.30 in Malaysia, Indonesia and Philippines respectively. The mean LOS in days was 9.2, 8.0 and 6.6 in the three countries, respectively. **CONCLUSIONS:** Our study is the first to utilize these databases to study and compare the burden of pneumonia across three countries in Asia. The CFR and LOS varied in each of the countries likely due to a variety of reasons including differences in socio-economic conditions, patterns of infection as well as health system differences. In conclusion, pneumonia is significant burden in the South East Asian countries studied.

PRS18

COST AND COST-EFFECTIVENESS ANALYSES FOR MODERATE AND SEVERE COPD PATIENTS TREATED UNIQUELY WITH TIOTROPIUM 18 MCG OD FOR TWENTY-FOUR MONTHS

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OBJECTIVES: To evaluate cost and cost-effectiveness of tiotropium monotherapy administered for 24 months (18 mcg die) in patients suffering from mild-to-moderate and severe chronic obstructive pulmonary disease (COPD). **METHODS:** A recent published study showed that tiotropium monotherapy enables a significant minimization of morbidity in two groups of patients corresponding to predicted FEV1 baseline values ≤ 50% (A) and > 50% (B). Clinical outcomes (days in hospital, visits in general ward, cycles of systemic steroids, cycles of antibiotics and maintenance therapy drugs) were evaluated from the Italian NHS perspective. In order to perform cost-effectiveness analysis, FEV1 value, available for each patient, was converted in SGRQ score using a published multivariate linear model; then utilities were obtained through the Ståhl equation. **RESULTS:** Results from comparison between 24 months of standard therapy and subsequent 24 months of tiotropium monotherapy show that hospitalization cost, which represents the driving treatment cost, drops from 74.1% to 67.3% (A) and from 64.5% to 31.6% (B) of the total cost; differently maintenance therapy cost increases but it is more than offset by the savings accruing from the shortening of hospitalization. Furthermore, cost-effectiveness results reveal a mean saving of 216 € (A) and 900 € (B) other than a mean gain of 0.07 QALY(A) and 0.03 QALY(B). Dominance of tiotropium calculated only with patients completing treatment course reveal that in almost 30% (A) and 37% (B) of subjects tiotropium strategy is dominant while only in 2% (A) and 7% (B) of cases are associated to costs increment and worsening on quality of life. **CONCLUSIONS:** These results suggest that adoption of tiotropium as unique treatment in selected mild-to-moderate and severe COPD patients yields significant costs savings and has a beneficial effect on evaluated quality of life.

PRS19

DOUBLING OF HEALTH CARE COSTS AMONG ASTHMA PATIENTS WITH COPD DIAGNOSIS AND ITS ASSOCIATED CO-MORBIDITIES IN A CLAIMS DATABASE IN THE UNITED STATES

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OBJECTIVES: To estimate health care costs for asthma patients with and without a COPD diagnosis. **METHODS:** Asthma patients with and without diagnosed COPD were selected from the HealthCore Integrated Research Database covering administrative claims from approximately 27.6 million people in the USA. The index event was a patient's first exacerbation defined as oral corticosteroid prescription fills or emergency department visits or inpatient visits with a primary diagnosis of asthma. Eligibility criteria were ≥1 asthma diagnosis, ≥1 exacerbation and 12 months of continuous health plan enrolment on each side of the index date. Total all-cause and asthma-related direct health care costs for 12 months before and after the index date were calculated for all patients and those with and without a COPD diagnosis. **RESULTS:** A total of 94,883 patients met all eligibility criteria, of these 15,127 (15.9%) had both asthma and COPD diagnoses. The mean patient age was 41.6 years and 62.4% were female. Co-morbid conditions were more common among asthma patients with a COPD diagnosis. Asthma-related direct costs represented 25-30% of all-cause direct health care costs for all patients. Among asthma patients, COPD and its associated co-morbidities roughly doubled all-cause and asthma related direct health care costs: mean annual pre-index all-cause health care costs were $20,012 (COPD diagnosis) versus $8,938 (no COPD diagnosis); mean annual pre-index asthma related costs were $5,623 (COPD diagnosis) versus $2,600 (no COPD diagnosis). Mean annual post-index costs were almost unchanged: all-cause costs of $21,692 (COPD diagnosis) versus $10,787 (no COPD diagnosis) and asthma-related costs of $5,242 (COPD diagnosis) versus $3,016 (no COPD diagnosis). **CONCLUSIONS:** The economic burden of asthma among patients with a COPD diagnosis in a US claims database is twice as high as those without a COPD diagnosis. Further research could adjust for the effects of age on the prevalence of co-morbidities among the different groups.

PRS20

THE IMPACT OF SMOKING ON HOSPITAL COSTS IN TIMES OF CRISIS; AN ADDITIONAL BURDEN TO THE VULNERABLE GREEK HEALTH CARE SYSTEM

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OBJECTIVES: Smoking has a tremendous impact on public health and has been a cause of major concern in Greece for more than twenty years. In times of economic recession when household income drops and health spending is decreasing, the demand for health services is transferred to the public sector. In light of the above, the aim of this study was to measure the number of smoking-related hospitalizations and the additional hospital costs for the treatment of smoking-attributable diseases. **METHODS:** A prevalence-based disease specific approach was used for the calculations. Greek-specific smoking-attributable fractions (SAFs) were calculated for all smoking-related diseases, coded according to the International Classification of Diseases ICD-10. Smoking attributable morbidity was obtained by applying the SAFs to all public hospital admissions for 2011. Total hospital costs associated with smoking were calculated by applying the smoking-attributable admissions to each DRG rate. **RESULTS:** For Greece, lung cancer (C33-C34), bronchitis and emphysema (J40-J42, J43) presented the highest disease-specific SAF with a value of 88.4% and 88.1% respectively. In 2011, smoking was responsible for 199,028 hospital admissions (8.9 % of total). Smoking-attributable hospital costs, based on the current pricing DRG system, has reached 400,011,801€ representing 7.7% of public hospital budgets. Ischemic heart disease (I20-I25) was found to be the main cost driver (90.3 million €), followed by other circulatory diseases (I00-I09, I26-I51) (55.8 million€) and pneumonia, influenza (J10-J18) (52.6 million €). **CONCLUSIONS:** Despite evidence of a decreasing trend, smoking is still a considerable public health issue in Greece and has a great impact on public health care system. Vigorous efforts have been implemented to promote a smoke-free environment and to enforce existing anti-smoking legislation however the Greek society still experiences a high proportion of smoking-attributable admissions and hospital treatment costs. The findings of this study further corroborate a call for stronger support of cost-effective tobacco control policies.

PRS21

IMPACT OF CHRONIC PAIN ON HEALTH CARE COSTS IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE AS COMPARED TO OTHER CHRONIC DISEASES

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OBJECTIVES: Surveys have found high rates of pain medication use among COPD patients. However, few data exist on how chronic pain affects health care utilization. We examined how chronic pain affects direct medical costs in COPD and a matched cohort of patients with other chronic diseases. **METHODS:** We conducted a retrospective analysis using claims data from one managed care system. COPD patients were matched by age, sex, insurance type, and encounter type to persons with other chronic conditions but without COPD [Alzheimer's, atrial fibrillation, cancer, kidney disease, acute myocardial infarction, diabetes, heart failure, ischemic heart disease, rheumatoid/osteoarthritis (RA/OA), and stroke]. Chronic pain was indicated by pain-associated diagnoses, procedures for pain interventions, or prescription fills for pain medications. **RESULTS:** The study cohort (7,952 COPD patients, 15,904 non-COPD) was 58% female; mean age, 69. A higher percentage of COPD patients were chronic users of any pain medication (41.2% vs 31.5%, P<0.0001). The only